

**REMARKS**

Claims 22-32 are pending in the present application. Claims 22-30 have been amended. Claims 31 and 32 have been presented herewith.

**Priority Under 35 U.S.C. 119**

Applicants note the Examiner's acknowledgment of the Claim for Priority under 35 U.S.C. 119, and receipt of the certified copy of the priority document.

**Drawings**

Applicants note the Examiner's acceptance of the drawings as filed along with the present application on December 10, 2004.

**Information Disclosure Statement**

An Information Disclosure Statement has been filed on August 26, 2008. The Examiner is respectfully requested to acknowledge receipt of the Information Disclosure Statement, and to confirm that the documents listed therein have been considered and will be cited of record in the present application.

**Claim Rejections-35 U.S.C. 112**

Claims 22 and 26-28 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Responsive to the concerns raised by the Examiner, the features of claim 22 related to the deviation of the orifice have been deleted. Also, claims 26 and 27 have been amended to feature respective single ranges, and the language "such as" has been removed from claims 26-28. Applicants respectfully submit that claim 22 and 26-28 are in compliance with 35 U.S.C. 112, second paragraph, and thus respectfully urge the Examiner to withdraw this rejection.

**Claim Rejections-35 U.S.C. 103**

Claims 22 and 29 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Hanss et al. reference (U.S. Patent No. 4,835,457) in view of the Kiesewetter et al. reference (U.S. Patent No. 4,521,729). This rejection, insofar as it may pertain to the presently pending claims, is traversed for the following reasons.

Claim 22 features an electrical impedance cell sizing apparatus for characterizing particles suspended in a liquid, or more particularly determining the size of particles in a liquid. The mixing chamber and collection chamber are featured as separated by a polymer membrane containing an orifice for passage of particles therebetween, wherein a diameter of the orifice is in a range from 10  $\mu\text{m}$  to 1000  $\mu\text{m}$ .

In contrast, the Hanss et al. reference as relied upon by the Examiner discloses an apparatus and process for determining the deformability of red corpuscles in blood.

Particularly, as described in column 2, lines 36-43 and also with respect to Fig. 2 of the Hanss et al. reference, the vertically mounted membrane filter has a limited number of pores of the order of 15 to 100 pores, each pore having a diameter between 3 and 5 microns.

Moreover, the secondarily relied upon Kiesewetter et al. reference also discloses an instrument for measuring the deforming capacity of red blood corpuscles, in particular by measuring transit times of erythrocytes through an opening smaller than the erythrocytes. A disposable cartridge that comprises a throw-away sample vessel with a plastic foil and a pore diameter of 3-6 microns and a length of 15-200 microns is described in column 7, lines 47-52.

Accordingly, the Hanss et al. and Kiesewetter et al. references disclose instruments for measuring the deforming capacity of red blood corpuscles by measuring transit times of erythrocytes through openings smaller than the erythrocytes. The Hanss et al. and Kiesewetter et al. references do not disclose an electrical impedance cell sizing apparatus as would be necessary to meet the features of claim 22. Particularly, in order for an instrument to measure the deforming capacity of erythrocytes, the diameter of the orifice through which the erythrocytes traverse must be smaller than the mean diameter of the erythrocytes. As described in column 1, lines 40-41 of the Kiesewetter et al. reference, the mean diameter of the erythrocytes is 7.5 microns. If the diameter of the orifice is not smaller than the diameter of the erythrocytes, deformation of the erythrocytes would not be realized during passage

through the orifice. Orifice diameters of 3-5 microns (Hanss et al.) and 3-6 microns (Kiesewetter et al. reference) are thus disclosed. The instruments in the Hanss et al. and Kiesewetter et al. references do not include an orifice having a diameter in a range from 10  $\mu\text{m}$  to 1000  $\mu\text{m}$  as featured in claim 22 of the present application. The instruments of the Hanss et al. and Kiesewetter et al. references fail to meet the features of claim 22, and are not electrical impedance cell sizing apparatuses.

Applicants moreover respectfully submit that one of ordinary skill would not look to the Hanss et al. or Kiesewetter et al. references in an effort to provide an electrical impedance cell sizing apparatus as featured in claim 22, because the Hanss et al. and Kiesewetter et al. references measure a different type of parameter (deformation capacity) than the electrical impedance cell sizing apparatus of claim 22. One of ordinary skill would have no motivation to consider modifying the instruments of the Hanss et al. and Kiesewetter et al. references to have larger orifice diameter, since larger orifice diameter such as 10 to 1000  $\mu\text{m}$  would not enable measurement of deforming capacity of red blood corpuscles. That is, the apparatuses would not function to deform red corpuscles if modified to have an orifice diameter in the range from 10 to 1000  $\mu\text{m}$  as featured in claim 22, and would thus be useless for the intended purpose. Accordingly, Applicants respectfully submit that the electrical impedance cell sizing apparatus of claim 22 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection, insofar as it may pertain to claims 22 and 29, is improper for at least these reasons.

Claims 23-28 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Hanss et al. reference in view of the Kiesewetter et al. reference, in further view of the Graham reference (U.S. Patent No. 6,111,398). Applicants respectfully submit that the Graham reference as relied upon does not overcome the above noted deficiencies of the primarily relied upon prior art. Moreover, one of ordinary skill would have no motivation to modify the apparatus for determining deformability of red corpuscles of the Hanss et al. reference which includes a multi-pore membrane, in view of the apparatus of the Graham reference which includes a complex conduit wall. Accordingly, Applicants respectfully submit that claims 23-28 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together for at least these reasons.

Claim 30 has been rejected under 35 U.S.C. 103(a) as being unpatentable over the Hanss et al. reference in view of the Kiesewetter et al. reference, in further view of the Berndtsson reference (WO99/01742). Applicants respectfully submit that the Berndtsson reference as secondarily relied upon does not overcome the above noted deficiencies of the primarily relied upon prior art, and that this rejection of claim 30 is improper for at least these reasons.

#### **Claims 31 and 32**

Applicants respectfully submit that claims 31 and 32, as dependent upon claim 22, would not have been obvious in view of the prior art as relied upon by the Examiner

taken singularly or together, for at least the same reasons as set forth above with respect to claim 22.

**Conclusion**

The Examiner is respectfully requested to reconsider and withdraw the corresponding rejections, and to pass the claims of the present application to issue, for at least the above reasons.

In the event that there are any outstanding matters remaining in the present application, please contact Andrew J. Telesz, Jr. (Reg. No. 33,581) at (571) 283-0720 in the Washington, D.C. area, to discuss these matters.

Pursuant to the provisions of 37 C.F.R. 1.17 and 1.136(a), the Applicants hereby petition for an extension of three (3) months to September 25, 2008, for the period in which to file a response to the outstanding Office Action. The required fee of \$525.00 should be charged to Deposit Account No. 50-0238.

Serial No. 10/517,382  
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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment for any additional fees that may be required, or credit any overpayment, to Deposit Account No. 50-0238.

Respectfully submitted,

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